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POWER OF ATTORNEY and CORRESPONDENCE ADDRESS INDICATION FORM

Application Number	
Filing Date	
First Named Inventor	Robert T. Bigelow
Title	Flexible Structural ...
Art Unit	
Examiner Name	
Attorney Docket Number	BA-U-RES-00010

I hereby appoint:

☐

Practitioners associated with the Customer Number:

OR

☒

Practitioner(s) named below:

Name	Registration Number
Franklin E. Gibbs, Esq.	44,709

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Please recognize or change the correspondence address for the above-identified application to:

☐

The address associated with the above-mentioned Customer Number:

OR

☐

The address associated with Customer Number:

OR

☒Firm or
Individual Name

Bigelow Aerospace

Address

1899 W. Brooks Ave.

Address

City

North Las Vegas

State

NV

Zip

89032

Country

USA

Telephone

(702) 639-4440

Fax

(702) 639-0881

I am the:

☐

Applicant/Inventor.

☒Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Name Robert T. Bigelow, President Bigelow Aerospace

Signature

Robert T. Bigelow

Date

4/25/03

Telephone

(702) 639-4440

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒

*Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.31 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Please recognize or change the correspondence address for the above-identified application to:

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OR

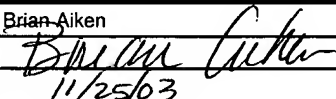
☐ The address associated with Customer Number:

OR

<input checked="" type="checkbox"/>	Firm or Individual Name	Bigelow Aerospace				
	Address	1899 W. Brooks Ave.				
	Address					
	City	North Las Vegas	State	NV	Zip	89032
	Country	USA				
	Telephone	(702) 639-4440	Fax	(702) 639-0881		

I am the:

☐ Applicant/Inventor.☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)**SIGNATURE of Applicant or Assignee of Record**

Name	Brian Aiken
Signature	
Date	11/25/03
Telephone	(702) 639-4440

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.31 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**Declaration
Submitted
With Initial
Filing

OR

Declaration
Submitted after Initial
Filing (surcharge
(37 CFR 1.16 (e))
required)

Attorney Docket Number

BA-U-RES-00010

First Named Inventor

Robert T. Bigelow

COMPLETE IF KNOWN

Application Number

Filing Date

Art Unit

Examiner Name

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**FLEXIBLE STRUCTURAL RESTRAINT LAYER FOR USE WITH AN INFLATABLE
MODULAR STRUCTURE**

(Title of the Invention)

the specification of which



is attached hereto

OR



was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				Yes	No
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☒ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

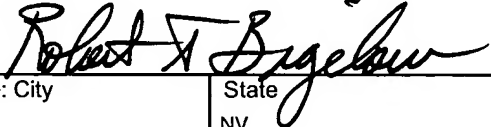
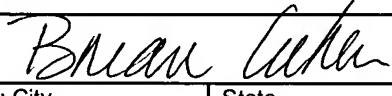
[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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DECLARATION — Utility or Design Patent Application

Direct all correspondence to: <input type="checkbox"/> Customer Number: <input type="text"/>				OR <input checked="" type="checkbox"/> Correspondence address below	
Name Franklin E. Gibbs, Esq.					
Address 1899 W. Brooks Ave.					
City North Las Vegas		State NV		ZIP 89032	
Country USA		Telephone (702) 639-4440		Fax (702) 639-0881	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.					
NAME OF SOLE OR FIRST INVENTOR:			<input type="checkbox"/> A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any]) Robert T.			Family Name or Surname Bigelow		
Inventor's Signature 			Date 11/25/03		
Residence: City Las Vegas		State NV		Country USA	
Mailing Address 1899 W. Brooks Ave.					
City North Las Vegas		State NV		ZIP 89032	
Country USA		Citizenship USA			
NAME OF SECOND INVENTOR:			<input type="checkbox"/> A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any]) Brian			Family Name or Surname Aiken		
Inventor's Signature 			Date 11/25/03		
Residence: City Las Vegas		State Nevada		Country USA	
Mailing Address 1899 W. Brooks Ave.					
City North Las Vegas		State Nevada		ZIP 89032	
Country USA		Citizenship USA			
<input type="checkbox"/> Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.					

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STATEMENT UNDER 37 CFR 3.73(b)Applicant/Patent Owner: Bigelow Aerospace

Application No./Patent No.: _____ Filed/Issue Date: _____

Entitled: Flexible Structural Restraint Layer for use with an Inflatable Modular StructureBigelow Aerospace, a LLC

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or2. ☐ an assignee of less than the entire right, title and interest.The extent (by percentage) of its ownership interest is _____ %
in the patent application/patent identified above by virtue of either:A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.**OR**B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.☐ Additional documents in the chain of title are listed on a supplemental sheet.☒ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

11-25-03
Date(702)639-4440

Telephone number

Robert T. BigelowRobert T. Bigelow
SignaturePresident, Bigelow Aerospace

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Application No./Patent No.: _____ Filed/Issue Date: _____

Entitled: Flexible Structural Restraint Layer for use with an Inflatable Modular StructureBigelow Aerospacea LLC

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or2. ☐ an assignee of less than the entire right, title and interest.The extent (by percentage) of its ownership interest is _____ %
in the patent application/patent identified above by virtue of either:A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.**OR**B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.☐ Additional documents in the chain of title are listed on a supplemental sheet.☒ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

11-25-03

Date

(702)639-4440

Telephone number

Brian Aiken

Typed or printed name

Brian Aiken

Signature

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application:	:	DECLARATION OF ROBERT T.
Number not assigned as of the	:	BIGELOW IN SUPPORT OF THE
date of this petition.	:	PETITION TO MAKE SPECIAL AND
Art Unit Number: Not yet assigned	:	ADVANCE EXAMINATION PURSUANT
Filing Date:	:	TO 37 CFR §1.102
First Named Inventor:	:	
Robert T. Bigelow	:	
Title:	:	
Flexible Structural Restraint	:	
Layer for use with an Inflatable	:	
Modular Structure	:	
Filing Date:	:	
Confirmation Number:	:	
Not yet assigned	:	

DECLARATION OF ROBERT T. BIGELOW

I, Robert T. Bigelow, do hereby declare:

1. I am an inventor of the flexible structural restraint layer for use with an inflatable modular structure.
2. I am President of Bigelow Aerospace (hereafter "Bigelow"), assignee of flexible structural restraint layer for use with an inflatable modular structure.
3. Bigelow is developing an inflatable modular human habitat (hereafter "Modular Habitat") for use in Earth Orbit. The Modular Habitat has the advantage of having an inflatable shell that is less heavy than a solid shell per cubic meter of deployed volume and thus less expensive to place into orbit. Also, while a solid shell space station cannot expand to gain more internal volume, the inflatable shell can be inflated to provide more internal working space.
4. Bigelow is privately funded and receives no government funding or grants toward the development of the Modular Habitat.

5. Bigelow has expended tens of millions of dollars in the research and development of a Modular Habitat.
6. The module has a flexible and inflatable multi-layered shell covering a rigid structural core. The shell can be compressed allowing the module to fit as in the payload compartment of a number of conventional lifting vehicles. When the module is placed in orbit, the shell can be inflated to many times its compressed size. When inflated, the module has more internal volume than a typical hard shell space structure of a similar launch payload size. The extra volume of the inflatable module allows for more crewmembers, equipment, and experiments. Thus, more can be accomplished with a single launch of an inflatable module than can be done with a single hard shell module.
7. A key invention to the development of the Modular Habitat is the flexible structural restraint layer for use with an inflatable modular structure.
8. The structural restraint layer has three main purposes. First, the restraint layer provides the outer boundary for the expansion of the air bladder when the shell is fully inflated.
9. Second, the restraint transfers the load caused by inflation of the shell from the less structural air bladder to the core.
10. Finally, the restraint layer is pliable which allows the restraint layer to be folded with the shell for loading into a payload of a lifting vehicle in the pre-deployed configuration and then to expand in the deployed state.
11. The development of a space based platform for researching various areas of science offers vast potential for identifying breakthrough technologies. This is exemplified in an article by the American Geological Institute published in 1997 and provided herein as Attachment A. This document was downloaded from <http://www.agiweb.org/legis105/spacstat.html>. Reference to this document does not mean that I subscribe to everything stated in the document. The document is being offered as support to specific areas that are pertinent to this declaration.

12. These areas include advances in the understanding and exploration of human health and development. (Attachment A, page 1, second paragraph).
13. One such area is that of investigating protein crystal growth in a micro-gravity environment. (Attachment A, page 3 starting at the last paragraph).
14. Material science is another area of research. (Attachment A, page 4 starting at the second full paragraph).
15. With the availability of more durable materials to produce items, the items last longer and there is less need for producing replacement items.
16. It is interesting to note that, in general, many manufacturing and production processes rely upon water and air in some fashion. For example, air is used to facilitate combustion in the production of electricity, which in turn powers many production and manufacturing facilities. Water is routinely used for cleaning or to distribute heat.
17. As to combustion technology, even a modest increase in efficiency will have a dramatic impact on the economy and the environment. For example, it is estimated that a 2% increase in burner efficiency would save the U.S. \$8 billion per year. Attachment A, page 3 starting at the second full paragraph.

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18. Due to the current expense of placing a space station into orbit, these types of experiments are usually performed by governments. The Modular Habitat will widen the demographic range of people and entities that could afford such experiments and thereby allow access for space experimentation and exploration to a wider group.

I declare under penalty of perjury under the laws of the United States of America that the above is accurate and true to the best of my knowledge.

Executed at 1899 W. Brooks Avenue, North Las Vegas, NV 89032, on

11/25, 2003.

A handwritten signature in black ink, reading "Robert T. Bigelow". The signature is written in a cursive style with a horizontal line underneath it.

Mr. Robert T. Bigelow
President
Bigelow Aerospace